

METHOD FOR CALCULATING WEIGHTED AVERAGE GROUND BOUNCE NOISE
GENERATED BY SIMULTANEOUS SWITCHING OUTPUTS IN A DIGITAL
SYSTEM

ABSTRACT

Ground bounce noise in a digital system is evaluated using a weighted average simultaneous switching output ("WASSO") on an I/O bank of a digital switching device, such as a field programmable gate array ("FPGA"). The WASSO allows a designer to normalize output drivers having different characteristics on a single I/O bank. In a further embodiment, a simultaneous switching output allowance ("SSO allowance") is calculated using scaling factors derived from values assumed in the creation of published SSO information and predicted actual values of the device in a digital system that are not represented in tables of published SSO guidelines. The SSO allowance is used in conjunction with WASSO values of adjacent I/O banks to evaluate ground bounce for adjacent I/O banks.